DOE/OR/21548-345
CONTRACT NO. DE-AC05-86OR21548

BUILDING DEMOLITION WASTE ANALYSIS PLAN

Weldon Spring Site Remedial Action Project
Weldon Spring, Missouri

OCTOBER 1992 **REV. 0**

U.S. Department of Energy
Oak Ridge Field Office
Weldon Spring Site Remedial Action Project

MK-FERGUSON A MORRISON KNUDSEN COMPANY Weldon Spring Site Remedial Action Project Contract No. DE-AC05-86OR21548	Rev. No. 0
PLAN TITLE: Building Demolition Waste Analysis Plan	

APPROVALS

Department Manager — Date 9/28/92

Quality Assurance Manager — Date 10/06/92

Deputy Project Director — Date 10/6/92

James R. Powers

Project Director — Date 10/7/92

DOE/OR/21548-345

Weldon Spring Site Remedial Action Project

Building Demolition Waste Analysis Plan

October 1992

Revision 0

Prepared by

MK-FERGUSON COMPANY
and
JACOBS ENGINEERING GROUP
7295 Highway 94 South
St. Charles, Missouri 63303

Prepared for

U.S. DEPARTMENT OF ENERGY
Oak Ridge Operations Office
Under Contract DE-AC05-86OR21548

m:\users\joanne\cheatham\bldgdemo.wap

TABLE OF CONTENTS

TABLE OF CONTENTS (Continued)

LIST OF FIGURES

LIST OF TABLES

1 INTRODUCTION

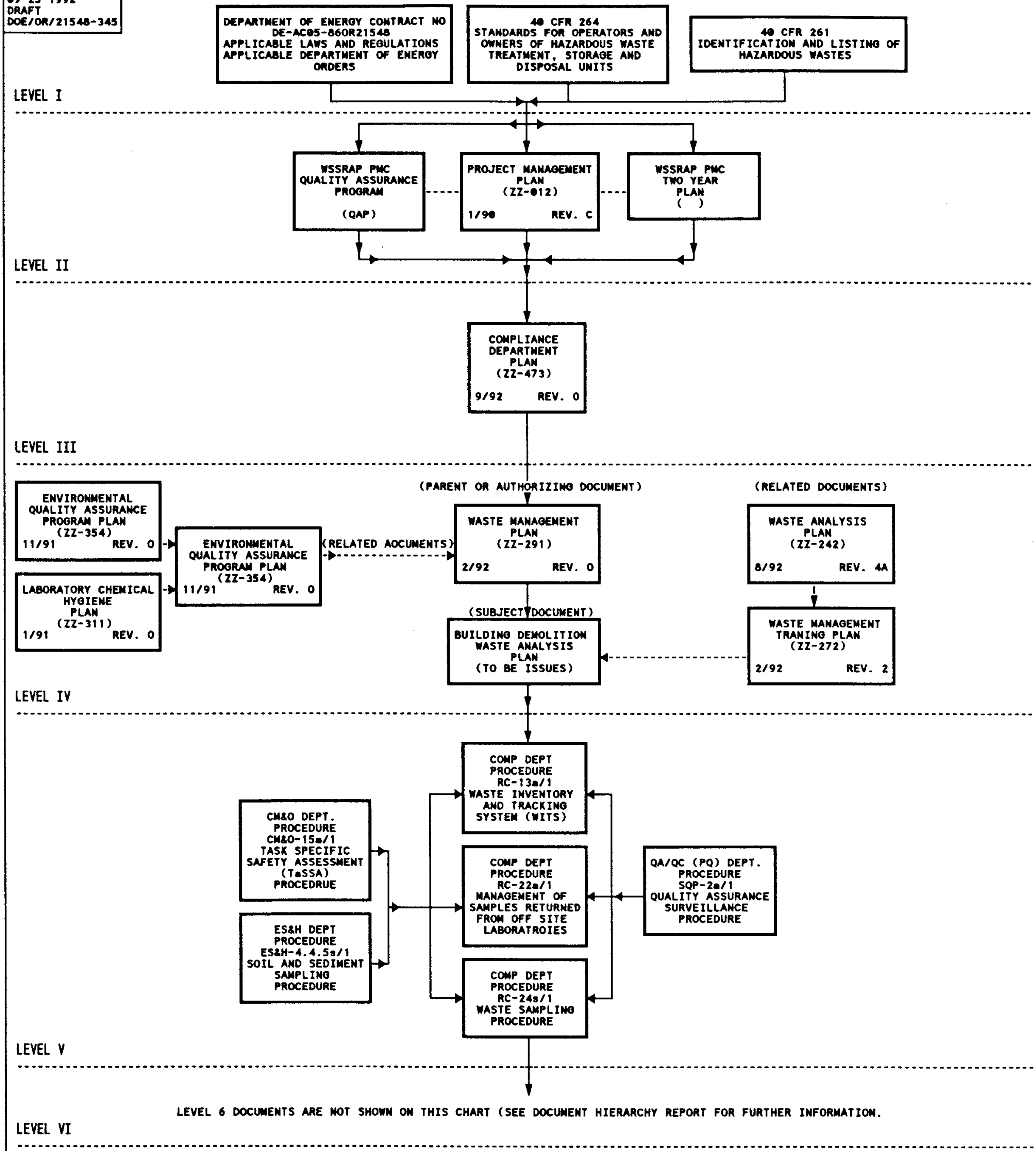
This *Building Demolition Waste Analysis Plan* has been designed to address chemical and radiochemical characterization requirements for management of wastes encountered during building demolition at the Weldon Spring site, (WSS) Weldon Spring, Missouri. At a minimum, this plan will provide the means to obtain information necessary to classify or store these wastes. The *Building Demolition Waste Analysis Plan*, which is designated as a Level IV document in the Compliance Department document hierarchy (Figure 1-1), fulfills the requirements of the Weldon Spring Site Remedial Action Project (WSSRAP) *Waste Management Plan* (MKF and JEG 1992a).

1.1 Background

Under the provisions of the *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA), the site is required to comply with the applicable substantive requirements of the *Resource Conservation and Recovery Act* (RCRA) regulations. The requirements for long-term storage of hazardous waste are found in Title 40 of the Code of Federal Regulations, Part 264, which pertains to operation of Department of Energy Technical Service Division hazardous waste facilities. These regulations require detailed chemical analysis of a representative sample of each waste.

The key elements of this *Building Demolition Waste Analysis Plan*, which are consistent with the General Facility Standards contained in 40 CFR 264.13(b)(1-3), specify:

- The appropriate sampling method for obtaining a representative sample of the waste for analysis.
- The parameters for which the waste will be analysised and the rationale for choosing those parameters.
- The test method for each parameter.



BUILDING DEMOLITION WASTE ANALYSIS PLAN

FIGURE 1-1

REPORT NO. DOE/OR/21548-345		EXHIBIT NO.
ORIGINATOR.	DRAWN BY.	DATE. 09-25-1992

1.2 Purpose

The purpose of this *Building Demolition Waste Analysis Plan* is to accomplish the following two objectives:

1. Characterization for compatibility and proper container selection prior to bulking and recontainerization of unknowns.

2. Identification of those wastes that are subjected to the storage requirements of RCRA and/or the *Toxic Substances Control Act* (TSCA).

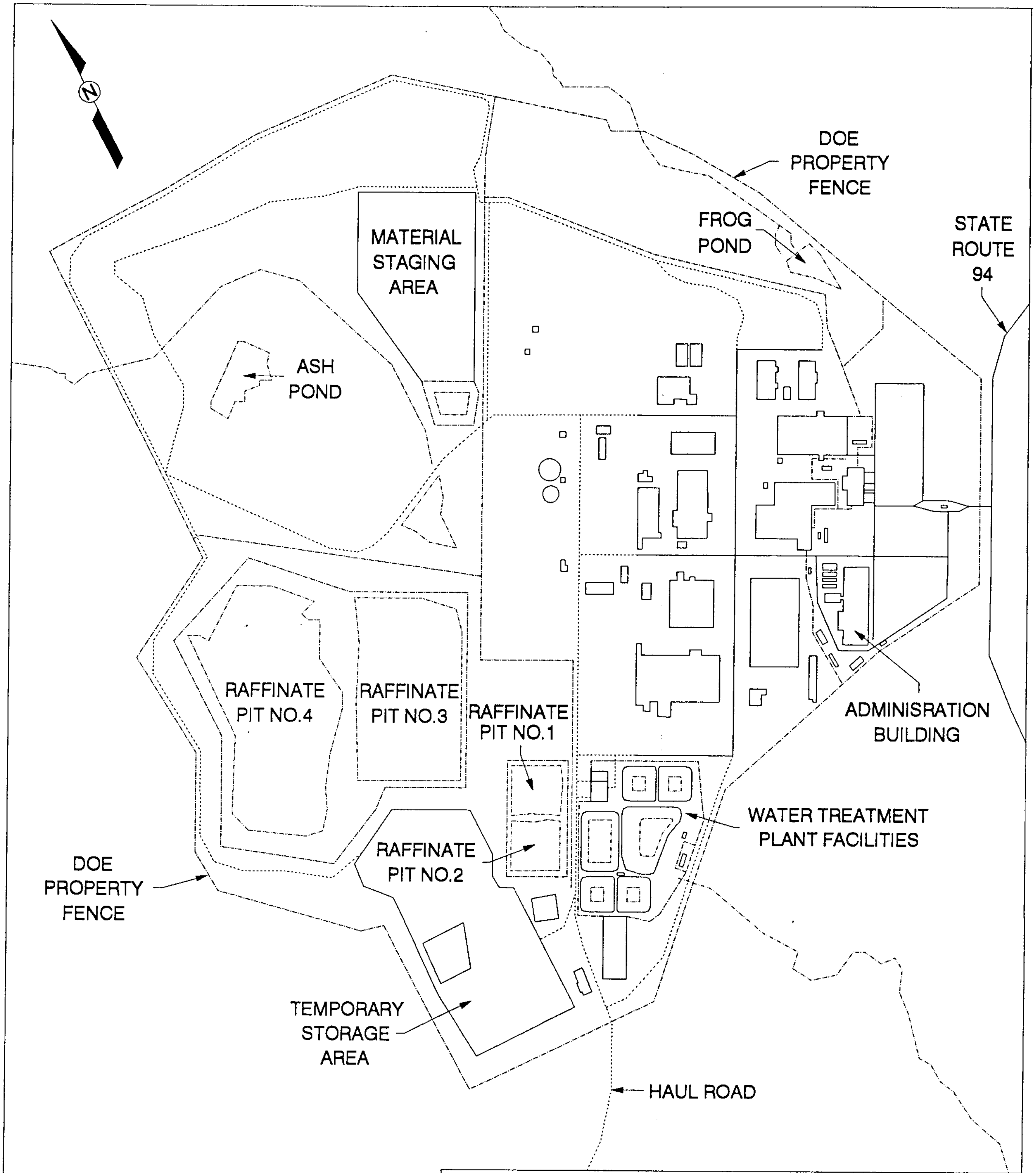
1.3 Scope

The plan is tailored specifically to sampling and analysis of waste materials during dismantlement and demolition of the Weldon Spring Chemical Plant (WSCP) complex.

1.4 Overview of Building Contamination

The WSCP is contaminated with radioactive materials, nitroaromatics, heavy metals, asbestos, and various organic compounds. Asbestos has been found throughout the site buildings in the form of transite siding and insulation. Most of the asbestos is radioactively contaminated. Appendix A of each Building Dismantlement and Demolition Health and Safety Plan (Packages 1, 2, and 3) is a summary of the radioactive materials, asbestos, man-made mineral fiber, and chemical chatacterization data.

The chemical plant consisted of 43 buildings and miscellaneous structures, and 32 debris piles as illustrated on Figure 1-2. The actual processing of radioactive materials occurred in only a small number of these buildings. However, contamination has been confirmed in most of the nonprocess buildings and external areas as well. The spread of contamination most likely occurred as a result of (1) routine plant operations (e.g., tracking of contaminants from process areas and temporary relocation of contaminated equipment for repair), (2) processing support activities (e.g., waste handling), and (3) surficial deposition of airborne particulates. Some contamination also may have occurred subsequent to plant closure as a result of relocation of some contaminated equipment from process buildings into nonprocess buildings during earlier



LAYOUT OF THE CHEMICAL PLANT AND RAFFINATE PIT AREA

FIGURE 1-2

REPORT NO.: DOE/OR/21548-345		EXHIBIT NO.:	A/CP/149/0992
ORIGINATOR: JC	DRAWN BY: GLN	DATE:	9/92

cleanup activities, and from transport of contaminated material by environmental factors (e.g., wind) and local biota (e.g., wasps).

Table 1-1 contains examples of the chemicals that have been used at the WSS.

1.5 Overview of Waste Characterization

There are seven general categories of waste that may require chemical and/or radiochemical characterization present at the Weldon Spring site. The manner in which the wastes are to be grouped is dependent on chemical composition.

1. Aqueous liquid wastes which are considered inorganic can be acids, bases, solutions containing toxic metals and/or organics, or solutions containing reactive cyanide or sulfides.

2. Non-aqueous liquid (NAL) wastes include chlorinated and non-chlorinated solvents, fuels, and organophosphorus liquids.

3. Oils and paints, although they are NALs, are treated as a separate category for the purposes of waste analysis.

4. Non-soil solids (NSS) include both inorganic and organic materials.

4a. Inorganic NSS materials may be inorganic salts or metals. It is possible that these wastes are characteristically hazardous due to water reactivity or elevated levels of toxic characteristic leaching procedure (TCLP) metals, cyanide or sulfide levels in excess of regulatory guidelines.

4b. Organic NSS materials include organic chemicals in crystalline or powdered form, wood material, and plastics. These wastes may be considered hazardous if they contain any TCLP constituent listed in 40 CFR 261.24 in excess of the regulatory limits.

TABLE 1-1 Chemicals Used at Former Explosives Production Facility and Uranium Feed Materials Processing Plant

TNT, DNT Production (chemicals used at site)	
Ammonia	Oleum (sulfuric acid)
Caustic soda	Toluene
Fuel oil	Nitric Acid
	Sellite (sodium sulfite)

Uranium Processing	
Nitric acid	Sodium zeolite
Sodium hydroxide	Sulfite
Sulfuric acid	Helium
Sodium carbonate	Hydraulic oil
Phosphate	Uranium metal
UNH (uranium amine)	Laboratory chemicals
UO_3 (uranyl oxide)	Perchloric acid
Uranium ore concentrate	Grease
Lime	Chlorine
Ether	Chromium phosphates
Ethylene glycol	Acid (miscellaneous)
Tributyl phosphate	Benzene
Ferric nitrate	Corrosive resistant coating
Paint and catalysts	Epoxy paint and catalysts
Anhydrous hydrogen	Unspecified flammable materials
Ammonia	Hot die lube
Green salt (uranium tetrafluoride)	Linseed oil (boiled)
Hydrofluoric acid	Lubriplate
Hydrogen gas	Melcolene
Nitrogen gas	Metalube
Orange oxide (uranium oxide orange)	Methylene glycol
Propane	Methylisobutyl ketone
Caustic liquid	Motor oil
Magnesium	Paint
Graphite sheets	Paint solvents
Diesel fuel	Phenoline thinner
Fuel oil	Polyclad
Gasoline	Polyurethane paint
Hydrogen zeolite	Rustbound primer
Refrigeration brine	Tar

Source: (MKF and JEG 1988).

5. Soils and inert solids include materials such as soil, sand, roofing material, concrete, dust collected in vacuum cleaner bags, and asbestos containing materials (ACM). ACM includes all forms of asbestos and man-made mineral fibers (MMMF). In most cases, ACM and MMMF are readily identifiable in the feild and no analysis is necessary. These wastes may be considered hazardous if they contain in excess of the regulatory limits of any TCLP constituent listed in 40 CFR 261.24 or polychlorinated biphenyls (PCBs) greater than 50 ppm.

6. Site generated wastes are those wastes generated during building demolition through personal protective equipment usage and monitoring activities. In many cases, the chemical make-up of the waste will be known, or can be approximated, through knowledge of the generation process and will allow these materials to be placed in one of the above mentioned categories.

7. The final general category of wastes is of unknown liquids and solids. These unknowns are primarily small quantities of laboratory reagents and commercial products, or those materials contained in sumps or tanks that have not been characterized or consolidated. Feild laboratory analysis will provide proper identification and subsequent reclassification into one of the other classes.

The field analytical requirements of each category are shown in Table 1-2. The field analysis will be performed, as needed, to determine shipping requirements, off-site analytical parameters, or general characterization.

The detailed laboratory analytical requirements and amount of sample required are shown in Table 1-3. Sample volumes listed in Table 1-3 are minimum sample volumes and assume matrices are homogeneous. Non-homogeneous samples or samples requiring quality control (QC) analysis may require different volume requirements. Samples that are highly contaminated may need substantially less sample volume. Also, some sample analysis can be combined into the same container (provided samples require similar preservatives). Coordination with the Weldon Spring Site Remedial Action Project (WSSRAP) laboratory coordinator prior to sample collection will aid in exact sample volume requirements. The *Waste Analysis Plan* (MKF and JEG 1992b) specifies the appropriate method for each parameter.

TABLE 1-2 Field Waste Analysis for Generic Waste Types

Parameter	Aqueous Liquids	Non-Aqueous Liquids	Oils & Paints	Inorganic Non-Soil Solids	Organic Non-Soil Solids	Soils & Solids	Unknowns[a]
Visual inspection	X	X	X	X	X	X	X
Surface radiological survey	X	X	X	X	X	X	X
pH	X			X		(b)	(b)
Redox	X	X		X	X	(b)	X
Solution-reactivity	X	X	X	X	X	(b)	X
Flame test	X	X	X	X	X	(b)	X
Sodium fusion		X			X	(b)	(c)
Ferrox		X			X	(b)	(c)
Hydrocarbon functionality		X			X	(b)	(c)
Oxygen functional group		X			X	(b)	(c)
Nitrogen functional group		X			X	(b)	(c)
Sulfur functional group		X			X	(b)	(c)
PCB screen			X			(b)	(c)
Flashpoint		X	X			(b)	(c)
Field compatibility	X	X	X	X	X	(b)	X
Fingerprint screening						(b)	
Inorganic functional group	X			X		(b)	(c)

X Test run.

(a) Unknowns are materials, which based on visual inspection and surface radiological scan, cannot be classified into any other class until sufficient field analyses are completed to allow reclassification.

(b) These tests will be performed based on the judgement of the Waste Management Group Manager or his designee on a case-by-case basis, reasoning for test selection will be documented an the Waste Management Sample Data Sheet.

(c) These tests will be performed once it has been determined that the waste can be classified in another generic class that is amenable to the indicated analysis.

TABLE 1-3 Laboratory Waste Analysis and Sample Requirements for Waste Types

Parameter	Aqueous Liquids	Non-Aqueous Liquids	Oils & Paints	Inorganic Non-Soil Solids	Organic Non-Soil Solids	Soils & Solids
Volatile organics	40 ml [a]	40 ml [a]	40 ml [a]	-----	40 ml [a]	40 ml[a]
Semi-volatile organics	1 L	1 L	1 L	-----	10 g	10 g
Total organic halides	250 ml	-----	-----	-----	-----	10 g
Total organic carbons	100 ml	-----	10 g	-----	-----	10 g
Radiological characterization	1 L	1 L	10 g	10 g	10 g	10 g
PCBs	1 L	1 L	30 g	-----	30 g	30 g
Dioxins and furans	-----	1 L	-----	-----	10 g	-----
Oil and grease	1 L	-----	-----	-----	-----	10 g
Sulfate	100 ml	------	-----	-----	-----	-----
Chloride	100 ml	-----	-----	-----	-----	-----
Nitrate	100 ml	-----	-----	-----	-----	-----
Fluoride	100 ml	-----	-----	-----	-----	-----
Phosphorus	50 ml	50 ml	5 g	5 g	5 g	5 g
TCLP metals	1 L	1 L	100 g	100 g	100 g	100 g
TCLP pesticides	1 L	1 L	100 g	100 g	100 g	100 g
TCLP herbicides	1 L	1 L	100 g	100 g	100 g	100 g
TCLP volatiles (ZHE)	40 ml [a]	40 ml [a]	100 g	100 g	100 g	100 g
TCLP semi-volatiles	1 L	1 L	100 g	100 g	100 g	100 g
Asbestos	1 L	1 L	5 g	5 g	5 g	5 g

TABLE 1-3 Laboratory Waste Analysis for Generic Waste Types (Continued)

Parameter	Aqueous Liquids	Non-Aqueous Liquids	Oils & Paints	Inorganic Non-Soil Solids	Organic Non-Soil Solids	Soils & Solids
Polyaromatic hydrocarbons	1 L	-----	-----	-----	30 g	30 g
Nitroaromatics	1 L	-----	-----	-----	30 g	30 g

[a] Requires two 40 ml vials with zero head space.

These tests will be performed based on the judgementof the Waste Management Group Manager or his designee on a case-by-case basis. Logic for parameter selection will be included on the Waste Management Sample Data Sheet per RC-24.

Wastes that can be categorized or determined to be nonhazardous based on original container labels do not require analysis for chemical characterization.

2 QUALITY ASSURANCE AND QUALITY CONTROL

Weldon Spring site (WSS) detailed laboratory data must be legally defensible and valid. This requirement must be understood, planned, and provided for to ensure that adequate quality control is maintained. The project quality assurance (QA) organization is detailed in the *Environmental Quality Assurance Program Plan* (EQAPP) (MKF and JEG 1991a), and the *Project Management Contractor Quality Assurance Program* (QAP) (MKF and JEG 1992d).

2.1 Data Quality Objectives

The analytical results will be used to determine storage and labeling requirements per applicable site, State, and Federal regulations.

2.2 Data Quality Requirements

Accuracy and precision will be determined and assessed through the use of quality control samples including distilled water blanks, trip blanks, equipment blanks, field duplicates, matrix spikes, and matrix spike duplicates. Table 2-1 documents the frequency for collecting these samples and the data quality requirements (DQRs) that apply.

Distilled water blanks will be used to monitor the purity of the distilled water used to prepare preserving reagents, trip blanks, and equipment blanks.

Trip blanks will be used to document volatile organic contamination attributable to shipping and field handling procedures. If the analytical work to be performed includes volatile organics, trip blanks will be collected. Trip blanks will be collected by filling the vial directly from the distilled water reservoir, transporting the vials unopened to the sampling site, and then shipping unopened to the laboratory. A trip blank will be prepared each day for each sampling activity in which samples are collected for volatile organic analysis.

Equipment blanks will be used for documenting adequate decontamination of reusable sampling equipment. They will be collected after completion of decontamination, and prior to sampling, by collecting a sample of the media used to rinse the sampling equipment.

TABLE 2-1 QA Sample Frequency and Data Quality Requirements for Waste Analysis

	Distilled Water Blank		Trip Blank		Equipment Blank		Matrix Spike & Matrix Spike Duplicate		Field Duplicate	
Analyte	Frequency	Criteria	Frequency	Criteria	Frequency	Criteria	Frequency	Criteria	Frequency	Criteria
Volatile organics	1/QTR	All compounds CMDL	1/Event	(a)	1/Event	(a)	1/20 or 1/batch	(b)	1/20 or 1/batch	(b)
Semi-volatile organics	NA	---	NA	---	1/Event	(a)	1/20 or 1/batch	(b)	1/20 or 1/batch	b
Pesticides/PCBs; herbicides	NA	---	NA	---	1/Event	(a)	1/20 or 1/batch	(b)	1/20 or 1/batch	(b)
Nitroaromatics	NA	---	NA	---	1/Event	(a)	1/20 or 1/batch	(b)	1/20 or 1/batch	(b)
Polyaromatic hydrocarbons	NA	---	NA	---	1/Event	(a)	1/20 or 1/batch	(b)	1/20 or 1/batch	(b)
Dioxins and furans	NA	---	NA	---	1/Event	(a)	1/20 or 1/batch	(b)	1/20 or 1/batch	(b)
Oil and grease/TPH	NA	---	NA	---	1/Event	(a)	1/20 or 1/batch	(b)	1/20 or 1/batch	<20% RPD
Total organic carbon	1/QTR	<1ppm	NA	---	1/Event	(a)	1/20 or 1/batch	(b)	1/20 or 1/batch	<25% RPD
Total organic halides	1/QTR	<5ppm	NA	---	1/Event	(a)	1/20 or 1/batch	(b)	1/20 or 1/batch	<25% RPD
Metals	1/QTR	All CMPD<MDL	NA	---	1/Event	(a)	1/20 or 1/batch	(b)	1/20 or 1/batch	(b)
Cl, SO_4, F, NO_3, PO_4	1/QTR	All CMPD<MDL	NA	---	1/Event	(a)	1/20 or 1/batch	(b)	1/20 or 1/batch	(b)
Total U, Th-228, 230, 232	1/QTR	All CMPD<DL	NA	---	1/Event	(a)	1/20 or 1/batch	(b)	1/20 or 1/batch	(b)
Swipes	NA	---	NA	---	1/Event	(a)	NA	---	1/20 or 1/batch	<50% RPD

(a) No higher than the highest of the following: All compounds <DL; All compounds <0.05 x Regulatory Threshold; All compounds <0.05 x Sample Concentration
(b) Evaluated on a case-by-case basis.

Field duplicates will be collected as close as possible to the same point in space and time at the freqency shown in Table 2-1. These samples will be used for documenting the precision of the sampling process.

Matrix spikes and matrix spike duplicates will be used to document the precision and bias of a method in a given sample matrix.

2.3 Data Verification

All detailed laboratory data must be reviewed and verified as specified in the *Waste Analysis Plan* (MKF and JEG 1992b) and RC-13a *Waste Inventory and Tracking System (WITS).*

2.4 Waste Analysis Records and Documentation

All waste analysis QA records must be maintained as specified in the *Waste Analysis Plan* (MFK and JEG 1992b).

2.5 Training

All WMG personnel involved in sampling, characterization, or data evaluation must be trained in accordance with the *Waste Management Training Plan* (MKF and JEG 1992c). Additionally, persons performing analysis in the waste management field laboratory must be trained according to the *Laboratory Chemical Hygiene Plan* (MKF and JEG 1991b) as required by Occupational Safety and Health Administration (OSHA).

3 SAMPLING METHODS

The Project Management Contractor (PMC) characterized radiological, asbestos, man-made mineral fibers (MMMF) and chemical contamination of the buildings and debris piles. Additional characterization may be necessary during dismantlement and demolition. Each container will be sampled up to a limit of ten containers. Ten or more containers will be consolidated in batches of ten. Any difference in the frequency of sampling will be determined by the Waste Management Group (WMG) based on prior sampling, process knowledge, or informational needs. The following addresses procedures for sampling wastes.

3.1 General

All waste management sampling activities will require that the task be detailed daily as required by procedure CM&O-15a *Task Specific Safety Assessments* (TaSSAs). The TaSSA considers risks associated with the sampling effort and specifies preventative measures to avoid accidents during work. The TaSSA will also specify, at a minimum, the material to be sampled, the sampling equipment to be utilized, and manpower requirements. At a minimum, waste management sampling teams will consist of two persons.

3.2 Sampling Strategies

Sampling procedures vary depending on the medium sampled (liquid, semisolid, or solid) and the type of structure containing the waste. The following discussion addresses procedures for sampling wastes during building dismantlement and demolition. If waste is not included in a section or combination of sections, the sampling method will follow the *Waste Analysis Plan* (MKF and JEG 1992b).

3.2.1 Sampling Drums

Access to a drum will affect the number of samples that can be taken from the drum and the location within the drum from which samples can be taken.

Bung top drums, which generally indicate the presence of liquids or sludges, limit access to the contained waste and restrict sampling to a single vertical plane. Such drums will be positioned with the bung in an upright position. The bung will be slowly loosened using a non-sparking bung wrench allowing any gas pressure to release. If the bung cannot be removed or loosened it may be necessary to remove the top of the drum or use another method to gain access to the material. A coliwasa, glass tube, vacsam sampling pump, or peristaltic sampling pump may be used to collect the sample.

For sludge or solids, the top of the drum will be removed to allow better access to the material. The surface of the waste will then be divided into an imaginary grid composed of eight sections as detailed by procedure RC-24s, and a minimum of five grid points will be selected to be sampled. Figure 3-1 shows a sample gride. Each selected grid point will then be sampled in a vertical manner along the entire length from top to bottom of the drum. These samples will then be composited to form a single sample.

3.2.2 Sampling Bags or Sacks, Containing Powder, Granular, or Packed Solids

Where possible, containers will be positioned upright prior to sampling. If possible, sacks or bags will be sampled as found to avoid rupturing them and spilling the contents.

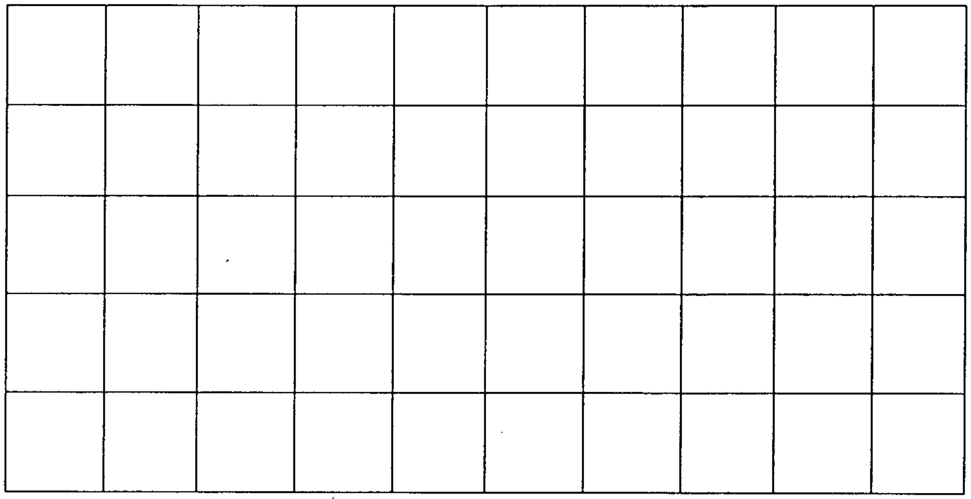
The container will be opened slowly and in a manner that minimizes the generation of airborne contaminants. Selected grid points will be sampled in a vertical manner along the entire length from top to bottom using an auger, trier, thief, scoop, or shovel. A composite sample will then be created from these samples.

3.2.3 Sampling a Tank

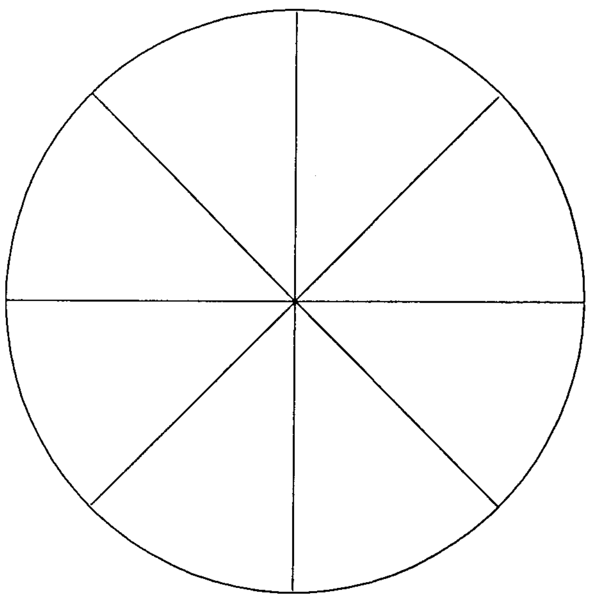
Tanks can generally be viewed as large containers or drums. Thus, in many cases, the principles that are applied to sampling a drum can also be applied to sampling a tank.

3.2.4 Sampling a Pit or Sump

The surface of the area to be sampled will be divided into an imaginary grid. Figure 3-1 shows a sample grid. The number of grid sections will be determined by the desired number of samples to be collected. Samples will be collected from random points on the grid and at various depths.



ROLL-OFF BOX



DRUM

NOT TO SCALE

EXAMPLE SAMPLE GRID

FIGURE 3-1

REPORT NO.: DOE/OR/21548-345		EXHIBIT NO.: A/PI/175/0992	
ORIGINATOR: JC	DRAWN BY: GLN	DATE: 9/92	

Compressed air or other circulating devices may also be utilized to mix the waste within a pit or sump in order to improve the homogeneity of the waste prior to sampling. In this manner, any solids or sediments that may have settled will be resuspended or dissolved prior to sampling.

A ponar sampler lowered to the bottom of the pond, pit, or sump by a rope or cable may be used to sample sediments or sludges that may have settled, if sediment or sludge is to be the focus of the sampling activity.

A weighted bottle may be used to sample liquids. A peristaltic or vacuum pump may be used if the waste can be made homogeneous. A coliwasa may be used if the pit or sump is sufficiently shallow. Hollow-stem augers and/or split-spoon samplers are appropriate for sampling solids.

3.2.5 Sampling a Roll-Off Box

Roll-off boxes are sampled using a three-dimensional random sampling strategy. The surface of the waste will be divided into an imaginary grid. Figure 3-1 shows a sample grid. Each selected grid point will be sampled at a specified depth to provide a three dimensional sampling. The sampling devices most commonly used for roll off boxes include thief, triers, and shovels.

3.2.6 Sampling a Pipe

Pipes will be sampled during pipe removal. The Subcontractor will provide access to piping systems. Swipes may be utilized to determine the presence of residues within piping systems. If sufficient quantity of residue exists, the residue will be sampled. Solid residues will be sampled with a scoop, theif, or trier. Liquids will be poured in a controlled manner into a sample container. Liquids may be containerized before sampling. The drum will be sampled as previously stated.

3.2.7 Volumetric Sampling of Concrete and Wood

Concrete and wood have been characterized previously. If additional samples are required the sampling method will follow the *Waste Analysis Plan* (MKF and JEG 1992b).

3.2.8 Sampling Soil

The techniques for soil sampling are numerous. The procedure utilized at the Weldon Spring site (WSS) is detailed in procedure ES&H 4.4.5s. This procedure is consistent with the objective of collecting soil samples to determine the amount of hazardous material deposited on a particular area of land.

3.2.9 Swipe Sampling

Swipes can be used to sample residues or oily surfaces. Cotton gauze is saturated with an appropriate reagent (example water or hexane). Templates can be used to define the swipe area. When templates are not feasible, the sampler will estimate the area. For polychlorinated biphenyl (PCB) swipes, 100 cm^2 shall be swiped. Other swipe samples will be collected as directed by the Waste Management Group (WMG) manager, or his designee.

4 WASTE ANALYSIS

Chemical analysis of the building dismantlement and demolition waste materials at the Weldon Spring Site Remedial Action Project (WSSRAP) is intended to identify hazardous characteristics or hazardous components present in each waste. It is also designed to provide information to ensure safe storage and handling of the materials in compliance with all applicable regulations.

The analytical procedures are described in the *Waste Analysis Plan* (MKF and JEG 1992b).

5 REFERENCES

REGULATIONS

40 CFR Part 261 - *Identification and Listing of Hazardous Wastes*

40 CFR Part 264 - *Standards for Operators and Owners of Hazardous Waste Treatment, Storage, and Disposal Units*

FEDERAL DOCUMENTS

U.S. Environmental Protection Agency SW 846, 1986. *Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods. 3rd Edition.*

PROJECT MANAGEMENT CONTRACTOR PLANS

MK-Ferguson Company and Jacobs Engineering Group, 1988. *Phase I Chemical Soil Investigation Data Report for the Weldon Spring Chemical Plant/Raffinate Pits*, DOE/OR-21548-016. Prepared for the U.S. Department of Energy, Oak Ridge Operations Office. St. Charles, MO. January.

MK-Ferguson Company and Jacobs Engineering Group, 1991a. *Environmental Quality Assurance Program Plan*, Rev. 0. DOE/OR/21548-240. Prepared for the U.S. Department of Energy, Oak Ridge Operations Office, Weldon Spring Site Remedial Action Project. St. Charles, MO. November.

MK-Ferguson Company and Jacobs Engineering Group, 1991b. *Laboratory Chemical Hygiene Plan*, Rev. 0. DOE/OR/21548-184. Prepared for the U.S. Department of Energy, Oak Ridge Operations Office, Weldon Spring Site Remedial Action Project. St. Charles, MO.

MK-Ferguson Company and Jacobs Engineering Group, 1992a. *Waste Management Plan*, Rev. 3. DOE/OR/21548-166. Prepared for the U.S. Department of Energy, Oak Ridge Operations Office. St. Charles, MO. February.

MK-Ferguson Company and Jacobs Engineering Group, 1992b. *Waste Analysis Plan*, Rev. 4A. DOE/OR/21548-128. Prepared for the U.S. Department of Energy, Oak Ridge Operations Office. St. Charles, MO.

MK-Ferguson Company and Jacobs Engineering Group, 1992c. *Waste Management Training Plan*, Rev. 2. DOE/OR/21548-149. Prepared for the U.S. Department of Energy, Oak Ridge Operations Office. St. Charles, MO. October.

MK-Ferguson Company and Jacobs Engineering Group, 1992d. *Project Management Contractor Quality Assurance Program*, Rev. 0. DOE/OR/21548-333. Prepared for the U.S. Department of Energy, Oak Ridge Field Office. St. Charles, MO. September.

DEPARTMENT PROCEDURES

CM&O-15a	*Task Specific Safety Assessment (TaSSA)*
ES&H 4.4.5s	*Soil and Sediment Sampling*
RC-13a	*Waste Inventory and Tracking System (WITS)*
RC-22a	*Management of Samples Returned from Off-site Laboratories*
RC-24s	*Waste Sampling Procedure*
SQP-2a	*Quality Assurance Surveillance*
SQP-7a	*Quality Assurance Records*
SQP-9a	*Inventory, Validation and Transfer of QA Records for Retention*
SQP-10a	*Collection, Review and Temporary Storage of QA Records*